

THE MATACHIINAE, A GROUP OF CRIBELLATE SPIDERS

By B. J. Marples F.L.S.

Department of Zoology, University of Otago, N.Z.

(Accepted for publication December 1961)

INTRODUCTION

THE *Matachiinae* is a subfamily of cribellate spiders whose members are adapted for life in insect burrows in the twigs of trees and shrubs. They spin a small web around the hole in which they live, with the ladderlike arrangement of calamistrated threads commonly seen in the webs of Dictynid spiders. Their distribution, as at present known, is in eastern Australia and New Zealand, and there are seven species in two genera. A species described from the Baltic amber, of Oligocene age, has been placed in the subfamily, but this attribution is by no means certain. The *Matachiinae* has been regarded as a division of the family Psecridae, but there seems no reason for this or for their separation from the Dictynidae.

In comparing these species some unusual facts have come to light. The two species of *Matachia* found in New Zealand are not only sympatric but are an example of a pair of similar species which live together apparently filling the same ecological niche. A most surprising thing about them is that while *M. livoris* has a tracheal system confined to the abdomen, *M. hirsuta* has one extending freely into the cephalothorax. Such a difference between tracheal systems has been regarded by some authorities as being of familial importance, and it is unusual in two species which are otherwise structurally very similar. Some of the species of *Paramatachia* have scopulae; these are seldom found in cribellate spiders, except in the Zoropsidae and in the Tenggellidae.

SYSTEMATIC

Dalmas (1917 a), discussing the position of his new genus *Matachia*, said that it is in a very ambiguous position as it has resemblances to several neighbouring families. He pointed out that it resembles the Uloboridae in having a transverse thoracic groove, an undivided cribellum and a well developed anal tubercle. It resembles the Dictynidae in the eye-group and in having a uniserial calamistrum, that is one similar to those of the principal Australasian Dictynids. Dalmas concluded that, though *Matachia* should possibly be put in a new family of its own, he was inclined to place it in the Psecridae, which it resembles 'par un ensemble de caractères et surtout par son faciès'. Later, when he described *Paramatachia* (1917 b), he said that the resemblance between the male palp and that of *Fecenia* confirmed his tentative attribution of the *Matachiinae* to the Psecridae. This was accepted by Petrunkevitch (1942), who said that *Eomatachia* undoubtedly belongs to the Psecridae, and placed it in the subfamily *Matachiinae*.

Dalmas was mistaken in saying that the thoracic groove of *Matachia* is transverse, it is longitudinal. The anal tubercle is not unusually well developed, and an undivided cribellum is common. There are therefore no special resemblances to the Uloboridae.

The Psecridae, as defined by Simon (1892), were characterised by having claw-tufts as well as a median claw; the anterior legs much longer than the posterior ones; the tarsi very slender but slightly club-ended. The presence together of claw-tufts and a median claw appears to be almost unique among Araneomorph spiders though it occurs in *Cupiennius*, one of the Ctenidae (Comstock, 1940). It occurs also in the Aviculariidae (Berland, 1933). The Psecrids are large spiders which make large sheet-webs, that of *Fecenia* being slung by threads between trees.

while that of *Psechrus* is horizontal, stretched between rocks or roots, and formed into a dome. The spider clings below the sheet, after the manner of a *Linyphia*, and carries its cocoon in its chelicerae.

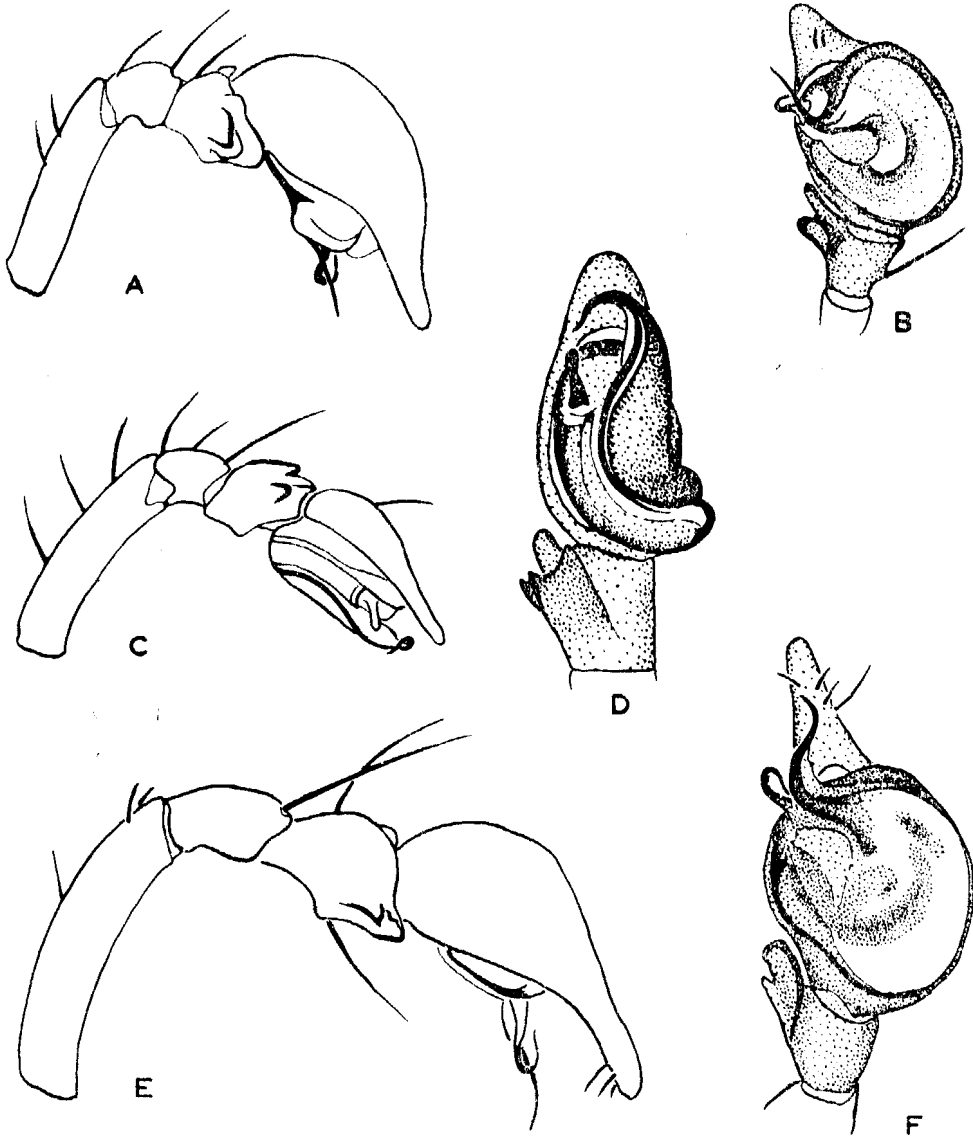


FIG. 1.—Retrolateral and ventral views of right male palps. A. and B. *M. hirsuta*. C. and D. *Ixeuticus martius*. E. and F. *M. livoris*.

The Matachiinae differ from the Psechridae in that they have no claw-tufts, and their tarsi are not remarkable. Their anterior legs are long, but this seems correlated with their habits. They live in hollow twigs and sit with their first three pairs of legs directed forwards, as in the tube-inhabiting *Segestria*, the long anterior pair frequently protruding from the entrance and holding the threads of the web. This consists of irregular radiating threads on which a ladderlike arrangement of cala-

mistrated threads is laid down, the common Dictynid type of web. The cocoon is fixed to the wall of the tube, which is lined very thinly with silk. Another striking difference between the Matachiinae and the Psechridae, as defined by Simon, is the calamistrum, which in the Matachiinae is uniserial and in the Psechrids is composed of hairs irregularly arranged in several rows or in a narrow band. The general appearance of the male palp, especially that of *Fecenia* with its elongated tarsus, is similar to that of *Matachia*.

Dalmas pointed out that Simon's family Psechridae was very homogeneous, but several genera added later necessitated its subdivision. He divided it into four subfamilies, the Psechrinae, Themacryinae, Stiphidiinae and Matachiinae. The first comprises *Psechrus* and *Fecenia*, the genera known to Simon. The other three genera differ in the absence of claw-tufts and in general proportions. The single genus *Themacrys* has scopulated tarsi and metatarsi, short chelicerae and divided cribellum. Petrunkevitch places it in the family Tenggellidae. *Stiphidion* was described from an immature male, but *Stiphidiellum*, placed by Dalmas in the Stiphidiinae, has recently been shown by Forster (1955) to be cribellate and to be *Laestrygones minutissimum* (Hogg), in the family Perissoblemmidae.

There seems no reason for placing the Matachiinae in the Psechridae, their resemblances seem to be far more strongly to the Dictynidae, not only in structure but also in behaviour and in the form of the web. Authorities differ as to whether the larger Dictynids, *Ciniflo* and others, should be included in the family Dictynidae or whether they should be placed in a separate family, the Cinifloidae (formerly Amaurobiidae). The Matachiinae resemble these, but here all are regarded as members of the Dictynidae. It is doubtful whether the subfamilial rank is justified, but to decide this a revision of the Dictynidae is required. The commonest and most widespread Dictynid in Australia and New Zealand is *Ixeuticus martius*, which is a large spider frequently inhabiting crevices in buildings and making an extensive ladderlike web similar to that of *Matachia*. The male palp and the epigynum of *Ixeuticus* (Fig. 1 C and D, Fig. 2 E) are not unlike those of the Matachiinae, especially *Paramatachia*.

Sub-Family MATACHIINAE

Inhabitants of hollow twigs, with elongated cylindrical body-form, long chelicerae directed forward, front legs longer than hind. Leg formula 1 : 2 : 4 : 3. Thoracic groove longitudinal; both rows of eyes almost straight; chelicerae with boss; cheliceral groove very oblique with three or four pro and two or three retromarginal teeth; lip long, more than half the length of the maxillae; calamistrum single; cribellum undivided; three claws, no claw-tufts; anterior spinnerets broad at base; plumose hairs.

genus <i>Matachia</i> Dalmas 1917	
<i>M. livoris</i> Dalmas	New Zealand.
<i>M. hirsuta</i> sp. n.	New Zealand.
genus <i>Paramatachia</i> Dalmas 1917	
<i>P. decorata</i> Dalmas	Queensland.
<i>P. tubicola</i> (Hickman)	S. Australia, Tasmania.
<i>P. media</i> sp. n.	Victoria.
<i>P. cataracta</i> sp. n.	New South Wales.
<i>P. ashtonesis</i> sp. n.	New South Wales.
genus <i>Eomatachia</i> Petrunkevitch 1942	
<i>E. latifrons</i> Petrunkevitch	Baltic Amber (Oligocene age).

I. *Matachia* Dalmas

Triangular plate between the clypeus and the bases of the chelicerae. Calamistrum about half the length of the metatarsus. In the male, the embolus is long, making

a full circle of the bulb, the conductor long and slender and accompanied by a hook. In the female the ducts to the spermathecae are long and sinuous. New Zealand.

The genus *Matachia* was established by Dalmas (1917) for his species *M. ramulicola*. He collected his specimens in the province of Nelson, in New Zealand, but he had no male. The male was described by Marples (1956) from the Three Kings Islands, which lie off the northern tip of New Zealand. In 1892 Urquhart described a single male from Auckland as *Tegenaria livoris*, in the Agelenidae. Bryant (1933) redescribed this specimen and erected for it a new genus *Urquhartia*, stating in error that the promargin of the cheliceral groove had many small teeth. This specimen though not well preserved, still exists in the Canterbury Museum, and examination of it shows it to be *Matachia*. This genus has priority over *Urquhartia* and so the species is *Matachia livoris* (Urquhart). Another species in the genus is here described as *M. hirsuta* n. sp. Chamberlain (1945) described *M. rufoflavus* from Auckland, but examination of his types shows this species to belong to the genus *Dictyna*. The genus *Matachia* therefore contains two known species, *M. livoris* and *M. hirsuta* both from New Zealand.

1. *Matachia livoris* (Urquhart) (Figs. 1 E, F. 2 A, B. 3 B. 4 A)

Tegenaria livoris Urquhart 1892.

Matachia ramulicola Dalmas 1917.

Urquhartia livoris Bryant 1933.

Described by Urquhart from a single male, from Maketu Bush Auckland. The type was redescribed by Bryant and is in the Canterbury Museum. It has been reexamined and compared with other specimens, and though it has been dried up and damaged it is clearly the same as Dalmas' *Matachia ramulicola*. He described the female from Nelson, and a specimen from this district is selected for description below. Marples (1956) described a male from the Three King Islands, and this is redescribed here.

MALE.—Length 6.72 mm. Carapace pale yellowish brown, slightly darker between the eyes and thoracic groove, and with faint radiating streaks. Dark brown along the anterior margin. Appendages and sternum pale yellowish brown. Abdomen pale with brown markings. Mid-dorsally are two parallel streaks, behind which are three large and three very small chevrons with their apices directed anteriorly. Antero-laterally are spots which become streaks along the sides and merge into a dark area on each side close to the spinnerets. Underside very lightly spotted.

Carapace :—Length 3.04 mm., breadth 1.96 mm. Breadth of eyegroup 0.93 mm. Low and smooth, truncated abruptly in front. Thoracic groove longitudinal. Free triangular plate between the bases of the chelicerae and the clypeus.

Eyes :—Eight, all pale. From above the anterior row is very slightly recurved, the posterior row very slightly procurved. Ratio of the diameters of the eyes and of their distances apart : AM, 56 ; AL, 63 ; PM, 64 ; PL, 68 ; AM-AM, 40 ; AM-AL, 101 ; AM-PM, 62 ; PM-PM, 94 ; PM-PL, 108 ; L-L, 19 ; Clypeus, 66.

Chelicerae :—With boss. Long and tapering, the fang long and the groove very oblique. Four teeth on the promargin, the next but one to the proximal end being the largest. Two small teeth on the retromargin, one opposite the largest promarginal one, the other opposite the most distal. A row of bristles parallel to each row of teeth, the prolateral being much the larger. Anterior surface of chelicerae with few or no bristles.

Maxillae :—Long with parallel sides, rounded anteriorly and with the median corner truncated.

Lip :—Rectangular, the anterior border slightly concave. A little more than half the length of the maxillae.

Sternum :—Length 1.52 mm., breadth 1.16 mm. Rebordered. Anterior margin straight, lateral margins slightly indented.

Palp:—Tibia with a bifurcated retrolateral apophysis continuous with a ventral ridge. Femur with a median dorsal spine and two distal dorsal ones, patella with one. Four trichobothria on tibia.

Legs :	I	II	IV	III	Palp
	4.95	4.01	2.78	2.59	1.38
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp...	1.62	0.96	...	1.62	4.20
I.....	3.36	5.32	4.69	1.71	15.08
II.....	3.16	4.33	3.44	1.26	12.19
III.....	2.33	2.75	2.26	0.53	7.87
IV.....	2.42	3.11	2.04	0.90	8.47
	Tibial Index I 15.6		Tibial Index IV 9.5		

Three claws, the paired ones with ten pectinations, the median one with two. Tarsi with spurious articulations. Trichobothria: six in a row decreasing in size proximally on tarsi I and II, two on III, four on IV. Similar rows occur on the metatarsi and tibiae. Spines; all legs similar. Metatarsus, 2 pairs and one ventral at the distal end, the proximal half with five pro and four retro. Tibia, one distal dorsal, two pro and four retro, one ventral. Femur, three distal, two dorsal. The tibiae and femora have rows of long curved hairs. No calamistrum.

Abdomen:—Length 3.84 mm., breadth 1.79 mm. Numbers of hooked hairs similar to those on the legs. Anterior spinnerets large and triangular, touching at the base. Cribellum undivided. Anal tubercle small.

In the moulted skin of a penultimate instar of a male the metatarsus IV resembled that of a female, and there was a calamistrum composed of 29 hairs. The adult male which emerged from this skin had no trace of a calamistrum. The hairs and spines were relatively longer and there were in addition the long curved hairs.

FEMALE.—Motueka, Nelson. Length 8.03 mm. General colour pale yellowish brown, legs somewhat darker distally. Chelicerae, maxillae lip and cephalic part of carapace, chestnut. Suggestion of dark chevrons on the dorsal side of the abdomen.

Carapace:—Length 3.04 mm., breadth 1.71 mm., breadth of eyegroup 1.11 mm. Almost parallel-sided but slightly widest opposite leg III.

Eyes:—From above the anterior row slightly recurved, posterior row straight. Ratio of the diameters of the eyes and of their distances apart: AM, 135; AL, 166; PM, 178; PL, 178; AM-AM, 150; AM-AL, 344; AM-PM, 221; PM-PM, 300; PM-PL, 457, L-L, 79; Clypeus, 138.

Chelicerae:—As in male. Some fine hairs near the base of the fang, otherwise the anterior surface without hairs except for a group of about six forwardly directed ones close to the margin of the carapace. Fang narrowing abruptly at about the middle, distal to which there is a double line of serrations.

Maxillae and Lip:—As in male.

Sternum:—Length 1.56 mm., breadth 1.08 mm.

Palp:—Long. Claw with nine pectinations. Tibia, and especially the tarsus with many hairs and coarse bristles. Some spines on the tarsus and a dorsal row of six or seven short trichobothria, decreasing proximally. Group of three or four at the proximal end of the tibia.

Legs :	I	II	IV	III	Palp
	3.41	2.79	2.22	2.02	1.45
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp...	1.35	1.53	...	1.58	4.46
I.....	2.47	3.77	2.84	1.29	10.37
II.....	2.16	3.00	2.33	1.00	8.49
III.....	1.78	2.00	1.58	0.76	6.12
IV.....	1.90	2.52	1.70	0.65	6.77
	Tibial Index I 13.2		Tibial Index IV 12.4		

As in male. Stout curved bristles in a row on the ventral side of the femora and more numerous on patellae and tibiae I and II, fewer on III and IV. Spines on metatarsi, tibiae and femora of all legs. Calamistrum a single row of 33 hairs, bounded at each end by a spine. It occupies about half the length of the metatarsus.

Abdomen.—Length 4.45 mm., breadth 2.29 mm. The dorsal surface with a number of curved hairs similar to those on the legs. Cribellum undivided. Epigynum as in figures.

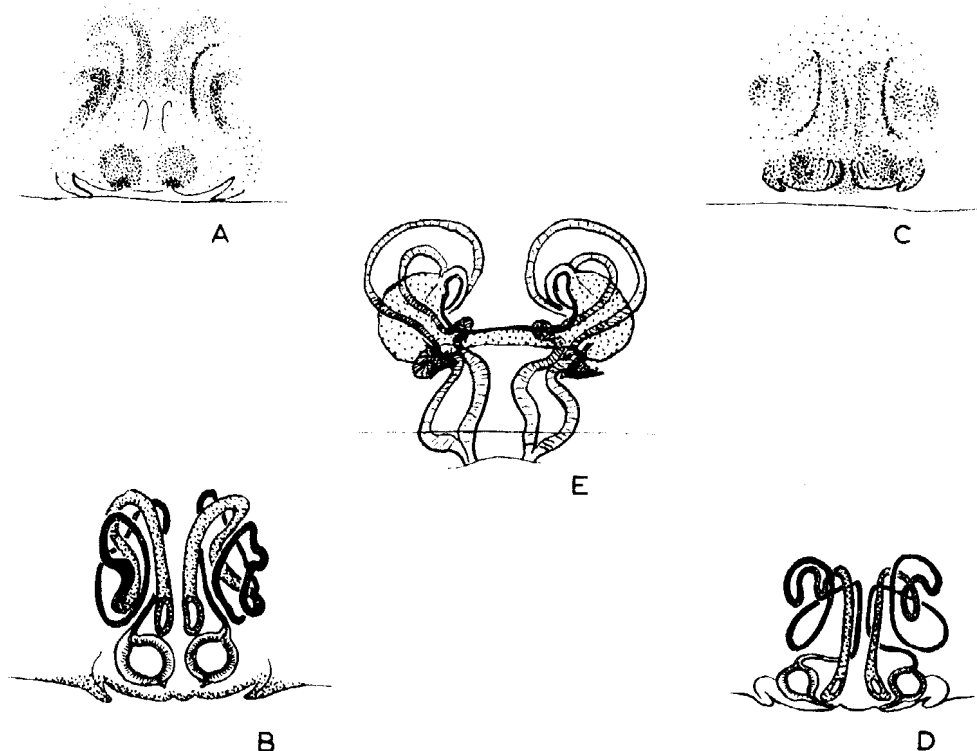


FIG. 2.—Surface views and potash preparations of female epigyna. A. and B. *M. livoris*. C. and D. *M. hirsuta*. E. *Ixeuticus martius*.

Tracheal system.—Spiracle close to the cribellum. The branches of the paired tracheal trunks are confined to the posterior half of the abdomen.

Distribution.—Recorded from numerous localities in both islands of New Zealand, also from the Three Kings Islands to the north and Stewart Island to the south.

2. *Matachia hirsuta* n. sp. (Figs. 1 A, B. 2 C, D. 3 A. 4 B.)

MALE.—Length 6.85 mm. (the specimen has the waist more extended than usual). Pale greyish-brown, legs faintly annulated with darker. Abdomen with anterior median dorsal dark streak, two pairs of oblique dark marks behind, sides and the region above the anal tubercle dark. Mid-ventral side dark. Chelicerae, maxillae, lip and anterior end of the carapace more chestnut-brown.

Carapace.—Length 2.45 mm., breadth 1.40 mm., breadth of eyegroup 0.77 mm. Cephalic part square, posterior part slightly swollen laterally. Free triangular plate below the clypeus, which is rebordered, projecting horizontally forward in a blunt point. Thoracic groove a small dark longitudinal streak.

Eyes :—Eight. From above both rows straight or very slightly recurved. Ratios of the diameters of the eyes and of their distances apart : AM, 116 ; AL, 143 ; PM, 162 ; PL, 142 ; AM-AM, 104 ; AM-AL, 221 ; AM-PM, 123 ; PM-PM, 235 ; PM-PL, 250 ; L-L, 64 ; Clypeus, 75.

Chelicerae :—With boss, long, tapering and projecting forwards. The proximal anterior region is convex. Groove very oblique. Small tooth at the proximal end of the promargin, followed by a large low tooth and two extremely small ones. Retro-margin without teeth.

Maxillae :—Long and parallel-sided. Median anterior corner truncated and with scopula.

Lip :—Long, approaching $\frac{3}{4}$ the length of the maxillae. Tapering slightly towards the anterior end, which is notched.

Sternum :—Length 1.33 mm., breadth 0.88 mm. Convex and rebordered. Straight anteriorly, slightly notched on the sides and a short point between coxae IV.

Palp :—Femur and patella each with two dorsal spines, tibia with one pro-lateral-dorsal spine. Tibia with a dark brown sharp prolateral-dorsal apophysis and a large retrolateral-ventral lobe these embracing the base of the tarsus. Posterior to the lobe on the retrolateral side is a large dark triangular apophysis. Details of palp as in the figures.

Legs :	I	II	IV	III	Palp
	3.81	2.99	2.09	1.88	1.06
	Femur	Pat. and tib.	Metatarsus	Tarsus	Total
Palp...	0.86	0.62	...	1.10	2.58
I.....	1.93	3.10	3.11	1.20	9.31
II....	2.26	2.35	2.12	0.99	7.72
III....	1.26	1.64	1.07	0.63	4.60
IV....	1.32	1.94	1.31	0.56	5.13
	Tibial Index I 15.3		Tibial Index IV 9.6		

Three claws, the paired ones with 12 pectinations, the median one with 2. Dorsal rows of trichobothria, decreasing in length proximally, on the tarsi, metatarsi and tibiae. Spines on metatarsi, tibiae and femora. No distinct calamistrum.

Abdomen :—Length 3.77 mm., breadth 1.66 mm. Some curved bristles at the posterior end but none antero-dorsally, or on the femora, as in *M. livoris*. Cribellum undivided. Six spinnerets, the anterior the largest, the median small and the posterior two-jointed. Anal tubercle small.

FEMALE.—Length 6.36 mm. Colour similar to male but the carapace darker brown with greyish margins, and an anterior central and three lateral streaks radiating from the thoracic groove.

Carapace :—Length 2.63 mm., breadth 1.32 mm., breadth of eyegroup 0.94 mm.

Eyes :—Ratios of the diameters of the eyes and of their distances apart : AM, 125 ; AL, 159 ; PM, 143 ; PL, 155 ; AM-AM, 73 ; AM-AL, 274 ; AM-PM, 146 ; PM-PM, 223 ; PM-PL, 304 ; L-L, 68 ; Clypeus, 98.

Chelicerae :—Promargin of the groove with, on one side of the body, three teeth, the central much the largest ; on the other side of the body four teeth, the next to the proximal being the largest. On the retromargin two small teeth, one near the base of the fang, the other opposite the largest promarginal tooth.

Maxillae :—As in male.

Lip :—Anterior margin almost straight.

Sternum :—Length 1.35 mm., breadth 0.92 mm.

Palp :—One claw with eight pectinations. Many bristles and spines on tibia and tarsus. Four trichobothria on tibia.

Legs :	I	II	IV	III	Palp
	2.88	2.31	1.72	1.54	1.24
	Femur	Pat. and tib.	Metatarsus	Tarsus	Total
Palp...	1.08	1.03	..	1.16	3.27
I.....	1.60	2.64	2.30	1.01	7.55
II.....	1.51	2.14	1.60	0.82	6.07
III.....	1.19	1.32	0.97	0.47	3.95
IV.....	1.35	1.90	0.85	0.41	4.51
	Tibial Index I 13.0		Tibial Index IV 10.1		

Calamistrum a single row of more than half the length of the metatarsus consisting of 30 hairs. Not with a spine at each end.

Abdomen :—Length 4.60 mm., breadth 1.76 mm. Epigynum as in figure.

Tracheal system :—Spiracle close to the cribellum. The paired tracheal trunks give off branches to the abdomen, then each divides into some 20 fine parallel tubes which pass up into the cephalothorax. In a fresh specimen the white colour which these air-filled tubes give to the under side of the waist is often quite conspicuous.

Distribution :—Recorded throughout the South Island of New Zealand, but in the North Island only from two localities at the southern end.

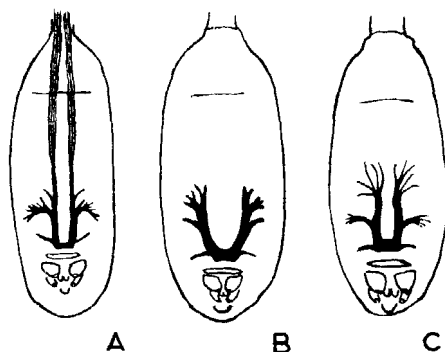


FIG. 3.—Diagrams of the main trunks of the tracheal system in the abdomen.
A. *M. hirsuta*. B. *M. livoris*. C. *P. tubicola*.

Differences between M. hirsuta and M. livoris

As compared with *M. livoris*, *M. hirsuta* is smaller and has shorter legs, and is greyer in colour. It is more hairy, this being especially noticeable on the anterior surface of the chelicerae. In *M. livoris* this region is without hairs except for a small group of long ones near the base. *M. hirsuta* has few or none of the long curved hairs seen on the legs and dorsal surface of the abdomen of *M. livoris*. The length of the calamistrum in *M. hirsuta* is more than half the length of the metatarsus, in *M. livoris* it is less, and in *M. hirsuta* it does not have a spine at each end. The male palp and the epigynum are of the same type but there are small differences shown in the figures. The most striking difference between the two species is in the extent of the tracheal system which is confined to the posterior half of the abdomen in *M. livoris* but extends freely into the cephalothorax in *M. hirsuta*. (Fig. 3A, B).

Behaviour and Life History

The two species of *Matachia* may be collected from the same locality, even from the same tree, and no difference between their habits has been detected. They inhabit holes in twigs, almost always those bored by insects, though occasionally they are found in hollow twigs which have been broken across. A very common and

characteristic habitat is provided by a gall produced by *Morova subfasciata* Walk., a moth belonging to the family Thyrididae, in *Muhlenbeckia australis*. *Muhlenbeckia* is a woody creeper, which is commonly found growing over shrubs and small trees. It has long slender stems which the caterpillar causes to swell into fusiform galls some 5 cm. long by 1 cm. at the widest part. When the moth emerges a hole is left leading to the hollow interior and in this the spider lives.

Muhlenbeckia, growing as it does over small trees, tends to provide a relatively humid environment. A great deal of the South Island consists of tussock-grassland with scattered thorny bushes of Matagourie, *Discaria toumatou*. This is a very hot and dry environment in summer and very cold in winter. At five scattered localities *M. hirsuta* has been found inhabiting beetle holes in Matagourie, and it seems possible that it may differ from *M. livoris* in this respect, though both occur together on *Muhlenbeckia*.

Dalmas described the habit of living in galls on a creeper, but, curiously enough, stated that there was no web, at most only a few threads on the bark. Actually a well developed web is constructed. This consists of a number of more or less parallel threads, 10 cm. or more in length, attached to the neighbouring twigs but not radiating from the hole in which the spider lives. A small network of threads joins them to the hole, to which there is very little silken lining. All these threads are of plain silk. The calamistrated threads are laid down on the parallel threads in a ladderlike fashion. A calamistrated thread runs for a short distance along one of the plain threads, crosses to another parallel one, proceeds along it for a short distance then passes back to the first, and so on. This ladderlike arrangement of the calamistrated threads is common in the Dictynidae. A fairly extensive web may be constructed in one night's spinning. It may be added to subsequently and remain in use for some time. Inside the hole the spider rests with three pairs of legs pointing towards the opening, and frequently the long anterior pair may be seen projecting and resting on the threads of the web. Remains of prey are seldom found in the web, but moths and beetles were observed. Captive specimens were observed to drag small insects into the hole and to eat larger ones out on the web. If the twig with the hole is gathered the spider readily leaves it. This seems to be peculiar behaviour for a spider apparently so well adapted for hole-living life.

It seems that the length of life is longer than one year. Eggs and young of *M. livoris* have only been noted in December and January, those of *M. hirsuta* between November and March. These are the months of the southern summer. These observations refer to the south of the South Island. Eggs and young of *M. livoris* were collected in the far north of the North Island in August. Adult females of both species have been collected throughout the year, and penultimate instar males also. Mature males have occasionally been collected from holes with webs, but as they do not possess calamistra they are presumably individuals which have only recently undergone their final moult. Mature males are seldom collected, but they are taken by beating the bushes, having presumably left their holes in search of a mate. The young spiders continue to live in their mother's hole until they are well grown. It is noticeable that many specimens of *Matachia* may be collected close together, while many neighbouring bushes are without them. This is probably due to the young leaving their natal hole when already well developed and settling down nearby. A similar distribution in groups is noticeable also in the Mygalomorphs, which have the same habit.

M. livoris seems to lay more eggs than *M. hirsuta*. From 12 examples, the average brood of *M. livoris* was 16.2, with the limits 2-48 while of ten broods of *M. hirsuta* the average was 8.6 and the limits 4-16. The average diameter of the egg of *M. livoris* is 0.94 mm. The egg cocoon, which has a thin covering of white silk, is attached to the wall of the hole in which the spider lives.

An attempt was made to follow the life history of *M. livoris* by measuring the length of the carapace of 103 individuals of different ages. Selected individuals of

what appeared to be different instars were then boiled in potash for detailed examination. The first instar, after the spiderling, has hairs, but the legs are without spines and there is no calamistrum. The cribellum appears as a ridge carrying four hairs. The lung-books are small, apparently with 7 leaves, but the tracheal system resembles that of the adult. The chelicerae have one retromarginal and 2 promarginal teeth. The second instar has leg spines, a calamistrum formed of 7 hairs and a functional cribellum. There are 2 teeth on the retromargin and 3 on the promargin of the cheliceral groove. The third instar has a calamistrum formed of 10 hairs and has 2 retromarginal and 4 promarginal teeth. The next 24 larger individuals do not fall into distinct size groups but seem to include two instars. A small one had a calamistrum with 14 hairs, while a large one had 23 hairs and rudiments of spermathecae. The penultimate instar had 28 hairs, the adult having 33, and the spermathecae may be visible externally in the intact animal. It is possible that some instars have been missed but it appears that the life history includes the spiderling, 6 instars and the adult, 8 post-egg stages in all. Those up to the third instar are found living with the mother.

One specimen of *M. hirsuta* was found dead inside its hole and to be infected with a fungus. I am indebted to Dr. J. M. Dingley of the Plant Diseases Division, D.S.I.R. for the information that this was *Akanthomyces araneorum* (Petch.) which is a parasite of spiders apparently with worldwide distribution.

II. *Paramatchia* Dalmas 1917

No triangular plate below the clypeus. Calamistrum occupying most of the length of the metatarsus. In the male the embolus is short and there is no long thin conductor nor a hook. In the female the ducts to the spermathecae are short. Australia and Tasmania.

The genus was established by Dalmas (1917 b) when he described both the male and female of a species from Queensland, Australia, under the name *Paramatachia decorata*. Hickman (1947) described *Neomatachia tubicola* from Reevesby Island, South Australia. It also occurs in Tasmania, and a male from there is described below.

Neomatachia is here regarded as a synonym of *Paramatachia*. It resembles it in all major features, especially in the structure of the male palp and also in the female genital apparatus. Three other species of *Paramatachia* are here described, one from Victoria and two from New South Wales, so that the genus now contains five species. It is possible that *P. media* and *P. ashtonensis* known from a male and females respectively, are the same species, but as they were found so far apart they are here given separate names.

The species are distinguishable as follows. The males of *P. decorata* and *P. media* have no hard process on the tibia of the palp, while those of *P. tubicola* and *P. cataracta* each have a hard sharp process. On the patella of the palp *P. decorata* has a vertical comb, *P. media* has an oblique comb, *P. tubicola* a horizontal comb and *P. cataracta* a hard sharp process.

Of the females, *P. decorata* and *P. ashtonensis* have the spermathecal openings some distance apart, *P. decorata* having an S-shaped duct and *P. ashtonensis* one of medium length. In *P. tubicola* and *P. cataracta* the spermathecal openings are close together at the extremities of a Y-shaped ridge, whose stem is long in *P. cataracta*. Both have short spermathecal ducts. If the genus *Neomatachia* is retained, the species here called *P. cataracta* should be assigned to it.

1. *Paramatachia decorata* Dalmas (Fig. 4 C. 5 A, B. 6 C, D.)

From Cooktown, North Queensland, Australia. In the Simon collection in the Museum National d'Histoire Naturelle, Paris.

MALE type.—Length 5.81 mm. Carapace chestnut, darkest anteriorly, chelicerae still darker. Legs pale brown. Abdomen pale brown flecked with white, anterior half with faint longitudinal dark bands, one dorsal and a lateral pair. Posterior half with oblique lateral darker bands, the two posterior pairs joined at their dorsal ends and above the anal tubercle. Maxillae and lip pale chestnut. Sternum greyish brown with narrow darker margin. Underside of abdomen pale brown.

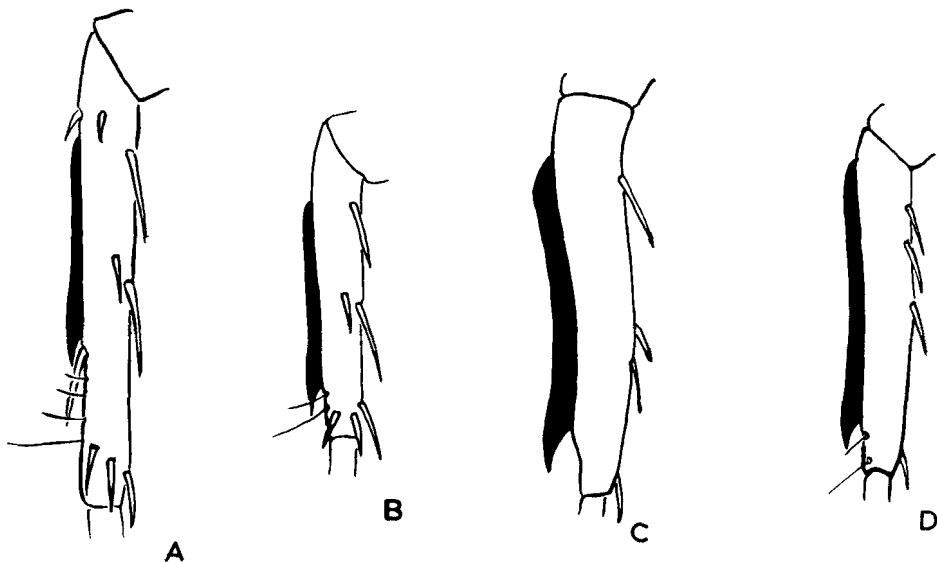


FIG. 4.—Metatarsi of leg IV of adult females, showing the extent of the calamistrum.
A. *M. livoris*. B. *M. hirsuta*. C. *P. decorata*. D. *P. tubicola*.

Carapace :—Length 2.50 mm., breadth 1.34 mm. Truncated in front, rounded behind, with gently curving sides. Widest opposite the second leg. Clypeus overhanging the bases of the chelicerae, no triangular plate between them. Thoracic groove a small dark longitudinal streak. Breadth of eyegroup 1.83 mm.

Eyes :—Eight all pale. Both rows straight. Ratios of the diameters of the eyes and of their distances apart : AM, 165 ; AL, 182 ; PM, 173 ; PL, 170 ; AM-AM, 120 ; AM-AL, 225 ; AM-PM, 173 ; PM-PM, 200 ; PM-PL, 237 ; L-L, 44 ; Clypeus, 100.

Chelicerae :—With boss. Long, tapering and directed forward. Surface granular and the upper surface thickly covered with hairs. Groove very oblique, retromargin with two widely spaced teeth, the larger near the base of the fang ; promargin with four teeth more closely spaced, the second most proximal being the largest. Fang constricted in the middle, its distal half being pale and with a serrated edge.

Maxillae :—Longer than lip. Wider distally, the median corner truncated obliquely, the lateral one rounded. With serrula.

Lip :—Longer than broad, less than $\frac{2}{3}$ the length of the maxillae. Anterior margin slightly concave.

Sternum :—Length 1.26 mm., breadth 0.83 mm. Convex, rebordered. Shield-shaped with slight indentations on the sides.

Palp :—Without spines. Patella with a distally-directed blunt point on its retrolateral side, this point being the same pale colour as the general surface, not hardened. At its base is a comb consisting of some 15–20 short, dark very closely set spines, directed distally. The axis of the group is perpendicular to the axis of the limb. Tibia without projections. Rounded dorsally, it has a longitudinal brown sinuous ridge ventrally. Details of the palp as in the figures.

Legs :	I	II	IV	III	Palp
	...	3.01	2.19	2.16	0.96
	Pat. and				
	Femur	tib.	Metatarsus	Tarsus	Total
Palp...	0.90	0.58	...	0.90	2.38
I.....
II.....	1.86	2.80	2.01	0.89	7.56
III....	1.51	1.79	1.50	0.62	5.42
IV....	1.54	1.83	1.58	0.55	5.50
	Tibial Index I ...		Tibial Index IV 7.0		

Three claws the paired ones pectinated seven, the median one two. Dorsal trichobothria on tarsi and metatarsi. Spines on the metatarsi and tibiae, and 1 dorsal one on the femora. Tibia and metatarsus II with many long dorsal hairs hooked in the proximal direction. Few on III and on tarsus II. Tarsus II slightly dilated and with a scopula along the whole length, slight scopula on tarsus III. Tarsi with spurious articulations.

Abdomen :—Length 3.16 mm., breadth 1.45 mm. Cribellum undivided. Six spinnerets, anterior stout and conical, posterior slender. Anal tubercle conical.

FEMALE.—Length 7.13 mm. Colour as in male but the abdominal pattern more strongly marked so that all the oblique lateral marks arise from a continuous dorso-lateral band. Underside of abdomen slightly darker between epigynum and spinnerets.

Carapace :—Length 2.75 mm., breadth 1.51 mm. Breadth of eyegroup 1.04 mm.

Eyes :—Ratios of the diameters of the eyes and of their distances apart : AM, 152 ; AL, 187 ; PM, 191 ; PL, 200 ; AM-AM, 135 ; AM-AL, 316 ; AM-PM, 166 ; PM-PM, 232 ; PM-PL, 369 ; L-L, 62 ; Clypeus, 140.

Chelicerae :—Shorter and stouter than in male. Fewer hairs on the upper surface and these confined to the distal region. The two teeth on the retromargin of the groove closer together near the base of the fang. Fang shorter and stouter.

Maxillae :—Similar to male but less concave laterally.

Lip :—As in male.

Sternum :—Length 1.47 mm., breadth 1.03 mm. As in male.

Palp :—Moderately hairy, tibia with three stout dorsal bristles, one proximal, two distal. Claw with three or four pectinations.

Legs :	I	II	IV	III	Palp
	2.74	2.53	1.99	1.97	1.12
	Pat. and				
	Femur	tib.	Metatarsus	Tarsus	Total
Palp...	1.05	1.07	...	0.96	3.08
I.....	1.87	2.63	2.02	1.00	7.52
II.....	1.84	2.58	1.71	0.85	6.98
III....	1.49	1.77	1.36	0.63	5.25
IV....	1.52	2.14	1.36	0.60	5.62
	Tibial Index I 9.0		Tibial Index IV 8.7		

Three claws, the paired ones pectinated nine, the median one two. Dorsal trichobothria on tarsi, metatarsi and tibiae. Legs without long curved hairs. No scopulae. Metatarsus IV keeled on the dorsal surface, which is lightly concave. Tall conspicuous calamistrum arising on the keel and occupying the whole of the length of the joint. In one specimen it consisted of 48 hairs. Tarsus with two spurious articulations.

Abdomen :—Length 4.22 mm., breadth 1.97 mm. Epigynum as in figure.

Several specimens of *P. decorata* were collected on Mt. Tambourine near Brisbane, Queensland, at a height of about 1800 ft. It was not possible to compare them directly with the types, but they appeared to correspond except in that the comb of bristles on the patella of the male palp is less well developed. The figure of the

internal structure of the epigynum is drawn from a Brisbane specimen. The spiders were living in beetle-holes in the dead stems of Lantana, and the web consisted of radiating calamistrated threads instead of the ladderlike arrangement seen in the webs of *Matachia* and also in those of *P. cataracta* and *P. ashtonensis*. One female was accompanied by well-grown young, as seen also in *Matachia*.

2. *Paramatachia ashtonensis* n. sp. (Fig. 6 A, B.)

Ashton Park, Sydney, N.S.W. From beetle holes in twigs, with ladderlike web.

FEMALE.—Length 6.53 mm. Carapace brown, darkest anteriorly. Chelicerae, maxillae and lip very dark brown. Sternum and legs light greyish brown. Abdomen light brown flecked with white above, anteriorly a dark patch dorsally and one on each side, posteriorly three pairs of oblique lateral marks.

Carapace:—Length 2.69 mm., breadth 1.50 mm., breadth of eyegroup 0.96 mm. Cephalic part convex, widest opposite leg III, groove longitudinal. Two minute plates between the clypeus and the chelicerae.

Eyes:—Eight. From above both rows very slightly recurved. Ratios of the diameters of the eyes and of their distances apart: AM, 163; AL, 177; PM, 158; PL, 163; AM-AM, 110; AM-AL, 212; AM-PM, 88; PM-PM, 212; PM-PL, 284; L-L, 90; clypeus, 98.

Chelicerae:—Convex dorsally near the base. Rough surface with very short hairs, a few larger ones on the prolateral and ventral surfaces. Groove oblique, promargin with 4 teeth the next to the proximal being the largest. Retromargin with 2 teeth near the base of the fang, the distal being the larger.

Maxillae:—Anterior end slightly expanded, rounded laterally truncated medially.

Lip:—About $\frac{2}{3}$ the length of the maxillae. Anterior margin straight.

Sternum:—Length 1.41 mm., breadth 1.02 mm. Margin slightly sinuous, rebordered. Anterior margin straight.

Palp:—Claw with four pectinations. Spines and trichobothria on the tibia and tarsus.

Legs:	I	II	IV	III	Palp	
	2.70	2.59	1.97	1.85	1.22	
		Pat. and				
	Femur	tib.	Metatarsus	Tarsus	Total	
Palp...	1.16	1.09	...	1.03	3.28	
I.....	1.85	2.49	1.92	1.02	7.28	
II.....	1.73	2.45	1.78	1.01	6.97	
III....	1.40	1.75	1.19	0.65	4.99	
IV....	1.52	1.92	1.29	0.56	5.29	
	Tibial Index I 9.3		Tibial Index IV 8.0			

Three claws with seven and two pectinations; pectinated hairs. Three spines on the femora; spines on tibiae and metatarsi. Calamistrum occupies almost the whole length of the metatarsus, in one specimen it had 34 hairs.

Abdomen:—Length 4.01 mm., breadth 1.87 mm. Epigynum as in figure. Cribellum undivided, spiracles immediately anterior to it.

Tracheal system:—Atrium with 2 large trunks supplying the abdomen only.

3. *Paramatachia media* n. sp. (Fig. 5 C, D.)

Single specimen from mallee scrub, Djerriwarrh Creek, Victoria, Australia. Living in a hollow twig. With a web, of ladderlike type.

MALE.—Length 5.14 mm. Carapace pale chestnut darker round eyes. Chelicerae dark brown, legs pale brown. Abdomen dark in front with patches along the sides. Dark patch over the heart, followed by three or four oblique dorso-lateral patches and one above the anal tubercle. Abdomen dark mid-ventrally.

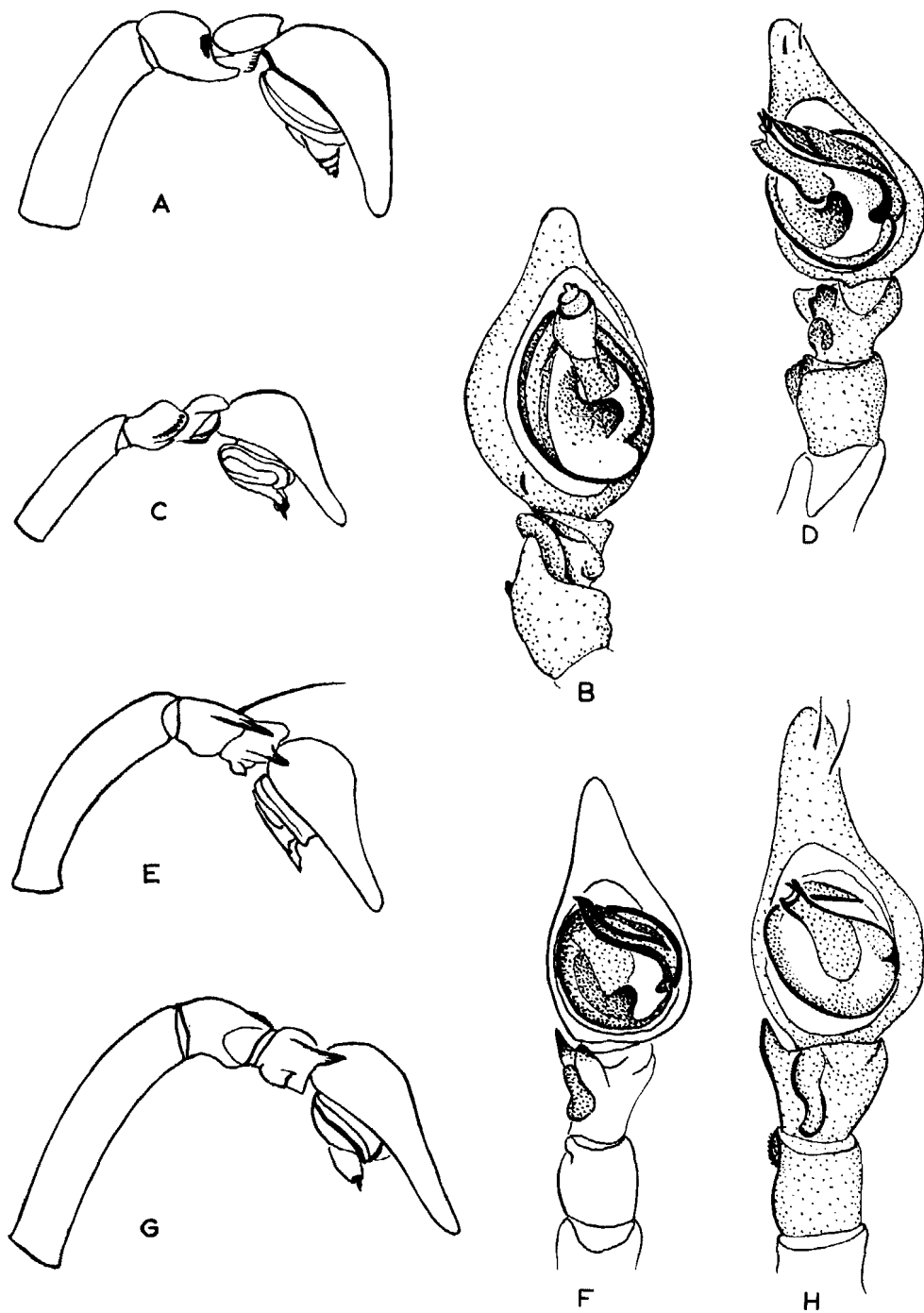


FIG. 5.—Retrolateral and ventral views of right male palps. A. and B. *P. decorata*. C. and D. *P. media*. E. and F. *P. cataracta*. G. and H. *P. tubicola*.

Carapace :—Length 1.97 mm., breadth 1.11 mm. Truncated in front, slightly curving sides, widest opposite leg II. Clypeus overhanging the chelicerae, no triangular plate between them. Thoracic groove a small dark longitudinal streak.

Eyes :—Eight. From above both rows very slightly recurved. Ratios of the diameters of the eyes and of their distances apart : AM, 146 ; AL, 120 ; PM, 132 ; PL, 115 ; AM-AM, 92 ; AM-AL, 164 ; AM-PM, 120 ; PM-PM, 153 ; PM-PL, 227 ; L-L, 90 ; Clypeus, 39.

Chelicerae :—Long, tapering and directed forwards. The anterior surface near the base convex and covered all over with hairs arranged in transverse rows. Groove very oblique. Promargin with a large tooth near the proximal end with a very small tooth on each side of it. Retromargin with a tooth near the base of the fang and another, about half the size, opposite the small distal promarginal tooth. A row of specially long and strong hairs parallel to the promargin.

Maxillae :—Slightly wider distally, median corner truncated, and with slight scopula.

Lip :—About $\frac{2}{3}$ the length of the maxillae, anterior margin concave.

Sternum :—Length 1.10 mm., breadth 0.76 mm. Convex, strongly rebordered. Anterior margin straight. Slight indentations opposite coxae III and IV.

Palp :—Without spines but some stout bristles on the tibia. The patella has a short dark-brown ridge obliquely placed on the retrolateral side. It is crowned by two crests, the inner smooth the outer notched. Tibia expanded distally to embrace the base of the tarsus, but into hairy processes not hard apophyses. Hard brown ventral ridge of complex shape. Details of palp as in figures.

Legs :	I	II	IV	III	Palp
	3.21	3.09	2.35	2.19	0.99
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp	0.74	0.45	...	0.76	1.95
I.....	1.43	2.22	1.71	0.88	6.29
II.....	1.52	2.23	1.50	0.84	6.09
III.....	1.22	1.51	1.08	0.50	4.31
IV.....	1.29	1.73	1.11	0.50	4.63
	Tibial Index I 10.2		Tibial Index IV 8.9		

Three claws, paired ones with nine pectinations, median one with 2. Dorsal trichobothria on tarsi, metatarsi and tibiae. Spines on metatarsi, tibiae and one dorsal one on each femur. Very slight suggestion of calamistrum. Slight scopula on legs I, II and III.

Abdomen :—Length 2.86 mm., breadth 1.27 mm. Cribellum undivided. Anterior spinnerets stout and conical, anal tubercle small.

4. *Paramatachia tubicola* (Hickman) (Fig. 3 C. 4 D. 5 G, H. 6 E, G)

Neomatachia tubicola Hickman 1947.

Described from a female from Revesby Island, South Australia. *Male allotype*. Collected at Risdon, Tasmania by V. V. Hickman.

MALE.—A newly moulted specimen. Length 6.34 mm. Carapace pale greyish-brown, black around the eyes. Chelicerae dark greyish-brown, legs pale with dark hairs and spines. Middle third of the tibia paler than the ends. Maxillae and lip greyish-brown, sternum grey. Abdomen, ground-colour pale mottled with white, grey ventrally between the waist and posterior spiracles. Conspicuous dark dorsal and lateral pattern, consisting of a median band above the heart and a small mark above the anal tubercle. A transverse band above the waist extending back halfway along each side, and, posterior to it, four oblique lateral bands. The first two are continuous dorsally, the last with the mark above the anal tubercle.

Carapace : Length, 2.46 mm., breadth 1.25 mm., breadth of eyegroup 0.77 mm. Rectangular with slightly rounded sides, widest opposite leg II. Thoracic groove a small longitudinal dark streak. No triangular plate between the carapace and the bases of the chelicerae.

Eyes : 8, all pale. From above, front row slightly recurved, hind row very slightly recurved. Ratios of the diameters of the eyes and of their distances apart : AM, 142 ; AL, 145 ; PM, 134 ; PL, 200 ; AM-AM, 101 ; AM-AL, 253 ; AM-PM, 149 ; PM-PM, 188 ; PM-PL, 266 ; L-L, 62 ; Clypeus, 89.

Chelicerae : Conspicuous pale boss. Long, directed forward, convex anteriorly near the base. Surface tuberculated with a very short hair on each tubercle, becoming long distally and on the edges of the groove. Groove very oblique, 2 retrolateral teeth near the base of the fang the distal the larger, 4 prolateral teeth the second proximal the largest.

Maxillae : Long, slightly concave laterally, rounded anteriorly with the median corner very obliquely truncated.

Lip : More than half the length of the maxillae. Straight, slightly notched, anterior margin.

Sternum : Length 1.26 mm., breadth 0.91 mm. Shield-shaped with slight projections opposite the coxae. Rebordered.

Palp : Patella with a dorso-retrolateral longitudinal dark ridge with a serrated edge. Tibia rounded prolaterally embracing the tarsus, but with a sharp, dark, retrolateral apophysis directed distally. Ventro-retrolaterally there is a sinuous, scroll-like ridge. Tarsus bluntly pointed. Conductor and adjacent process short. Details as in figures.

Legs :	I	II	IV	III	Palp
	3.28	3.11	2.38	2.34	1.10
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp...	1.15	0.59	...	0.96	2.70
I.....	1.83	2.97	1.21	1.07	7.08
II.....	1.83	2.82	1.00	1.02	6.67
III....	1.57	2.12	1.42	0.66	5.77
IV....	1.50	2.33	1.51	0.54	5.88
	Tibial Index I 13.1		Tibial Index IV 9.7		

Three claws, paired ones with 7 pectinations, median one with 2. Tarsi, metatarsi, and to a lesser extent the tibiae, covered with long, dark proximally-curved hairs. Spines on metatarsi and tibiae and a dorsal one on the femora. Dorsal row of trichobothria, increasing in length distally, on metatarsi and tarsi. No scopula and no calamistrum.

Abdomen : Length 3.35 mm., breadth 1.88 mm. A few scattered straight hairs about twice the length of the general hairs. Anterior spinnerets conical, others slender. Conspicuous undivided cribellum. Anal tubercle conical.

FEMALE. From Risdon, Tasmania. Collected with the male by V. V. Hickman. Length 6.10 mm. Colour as in male only more intense.

Carapace : Length 2.55 mm., breadth 1.38 mm., breadth of eye group 0.86 mm.

Eyes : Both rows slightly recurved. Ratios of the diameters of the eyes and of their distances apart : AM, 147 ; AL, 157 ; PM, 142 ; PL, 149 ; AM-AM, 135 ; AM-AL, 180 ; AM-PM, 160 ; PM-PM, 251 ; PM-PL, 239 ; L-L, 134 ; Clypeus, 146.

Chelicerae, *Maxillae* and *Lip* : As in male.

Palp : Claw with 4 pectinations. Tarsus with bristles, hairs, 2 prolateral spines and 2 pairs of short ventral spines close to the distal end.

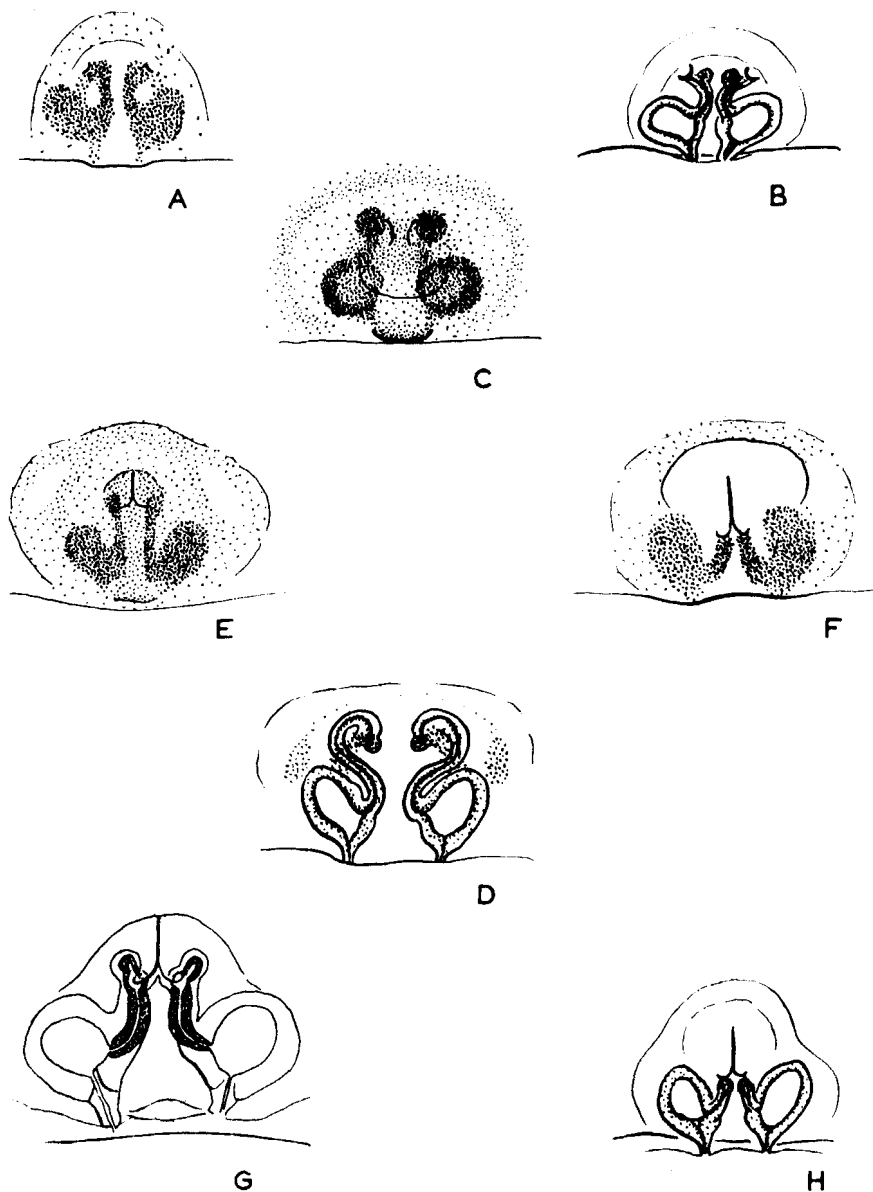


FIG. 6.—Surface views and potash preparations of female epigyna. A. and B. *P. ashtonensis*. C. and D. *P. decorata*. E. and G. *P. tubicola*. F. and H. *P. cataracta*.

Legs :	I	II	IV	III	Palp
	2.71	2.45	2.30	2.26	1.07
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp...	1.12	0.98	...	0.64	2.74
I.....	1.64	2.45	1.84	1.00	6.93
II.....	1.52	2.29	1.54	0.88	6.23
III.....	1.28	1.58	1.12	0.61	4.59
IV.....	1.34	1.78	1.17	0.54	4.83
	Tibial Index I 10.0		Tibial Index IV 7.9		

Paired claws with 6 pectinations, median claw with 2. Spines on metatarsi and tarsi and one dorsal one on the femora. Metatarsus IV concave on the pro-lateral side so that the calamistrum lies on a brown slightly concave dorsal ridge, and extends almost the length of the joint. In one specimen it consisted of 38 hairs.

Abdomen : Length 3.75 mm., breadth 1.72 mm. Epigynum as in figure. Conspicuous undivided cribellum, posterior spiracles immediately anterior to it. A transverse atrium gives rise to a lateral pair of tracheae and a stout median pair which ramify in the posterior half of the abdomen only.

***Paramatachia cataracta* n. sp. (Figs. 5 E, F. 6 F, H.)**

Cascade Reservoir, Sydney, N.S.W. From beetle holes in twigs with ladder-like web.

MALE. Length 5.25 mm. Carapace dark brown with streaks radiating from the groove. Chelicerae, lip, maxillae and sternum dark brown. Appendages pale, faintly, annulated. Abdomen pale with white patches. A black patch over the heart and posteriorly. Ventral side dark and a dark patch on each side towards the front. Postero-laterally 3 oblique black marks on each side, coalescing dorsally.

Carapace : Length 2.28 mm., breadth 1.21 mm., breadth of eye group 0.73 mm. Low and smooth, widest opposite leg II. Groove longitudinal. No plate between clypeus and chelicerae.

Eyes : 8. From above anterior row very slightly recurved, from in front posterior row slightly procurved. Ratio of the diameters of the eyes and of their distances apart : AM, 142 ; AL, 149 ; PM, 146 ; PL, 142 ; AM-AM, 132 ; AM-AL, 168 ; AM-PM, 121 ; PM-PM, 169 ; PM-PL, 170 ; L-L, 88 ; Clypeus, 93.

Chelicerae : Long, with boss, groove oblique. Promargin with 4 teeth removed from the base of the fang, the next to the proximal one being the largest. Retro-marginal with 2 teeth, the larger near the base of the fang, the smaller opposite the next to the distal promarginal tooth. Anterior surface covered with bristles.

Maxillae : Long, rounded anteriorly and truncated at the median corner.

Lip : Much longer than broad, $\frac{2}{3}$ the length of the maxillae. Narrower anteriorly where the margin is concave.

Sternum : Length 1.16 mm., breadth 0.84 mm. Convex, rebordered. Anterior margin straight, sides indented.

Palp : Patella with dorso-retrolateral ridge prolonged into a sharp process which is dark and hard and directed distally. Tibia with a hard dark distally directed process on the retrosurface, and a ventral scroll-like ridge. Two trichobothria. Details of palp as in figure.

Legs :	I	II	IV	III	Palp
	2.74	2.51	2.02	1.83	0.99
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp...	0.96	0.52	...	0.78	2.26
I.....	1.46	2.55	1.59	0.92	6.52
II.....	1.38	2.12	1.39	0.83	5.72
III.....	1.11	1.47	1.06	0.55	4.19
IV.....	1.22	1.73	1.16	0.48	4.59
	Tibial Index I 8.7		Tibial Index IV 8.2		

Three claws, with 9 and 2 pectinations. Trichobothria on tarsi, metatarsi and tibiae. Spines on metatarsi and tibiae and one on the dorsal side of each femur. No calamistrum. Scopula on legs I and II.

Abdomen : Length 2.79 mm., breadth 1.44 mm. Cribellum undivided.

FEMALE. Length 7.53 mm. Carapace brown, darker anteriorly. Chelicerae, lip, maxillae and sternum dark brown. Appendages pale and slightly annulated. Abdomen as in male but the dark markings less distinct.

Carapace : Length 2.55 mm., breadth 1.36 mm., breadth of eye-group 0.90 mm. Widest anteriorly, more convex in the cephalic region, groove longitudinal. Two minute plates between the clypeus and the bases of the chelicerae.

Eyes : 8. Ratios of the diameters of the eyes and of their distances apart : AM, 142 ; AL, 180 ; PM, 129 ; PL, 135 ; AM-AM, 142 ; AM-AL, 220 ; AM-PM, 131 ; PM-PM, 215 ; PM-PL, 147 ; L-L, 85 ; Clypeus, 107.

Chelicerae : Less elongated and more swollen than in the male. Teeth similar.

Maxillae and Lip : Similar to male but the anterior margin of the lip convex.

Sternum : Length 1.25 mm., breadth 0.96 mm.

Palp : Spines on tibia and metatarsus.

Legs :	I	II	IV	III	Palp
	2.61	2.37	1.87	1.65	1.05
	Femur		Pat. and tib.	Metatarsus	Tarsus
Palp...	0.96	0.90			0.56
I.....	1.61	2.32		1.68	1.03
II.....	1.53	2.17		1.48	0.85
III....	1.16	1.48		1.03	0.52
IV....	1.29	1.86		1.03	0.55
	Tibial Index I 9.5		Tibial Index IV 8.3		

Three claws, pectinations 9 and 2, pectinated hairs. Spines on metatarsi, tibiae, one on each femur and a ventral one on the tarsi near the claws. Row of trichobothria decreasing in size proximally, on the dorsal side of tarsus and metatarsus. Calamistrum almost the whole length of the metatarsus and with about 35 hairs.

Abdomen : Length 4.24 mm., breadth 1.98 mm. Epigynum as in figure. Conspicuous undivided cribellum with the spiracles immediately anterior to it.

Tracheal system : Atrium giving rise to two trunks supplying the abdomen only.

III. *Eomatachia* Petrunkevitch

This genus was erected by Petrunkevitch (1942) to include six specimens of adult male spiders fossilized in Baltic Amber of Oligocene age, which he placed in the species *Eomatachia latifrons*. He states that it undoubtedly belongs to the family Psecridae, and agrees with the chief characters of the Matachiinae. These are the absence of claw-tufts, the cribellum entire, the lip long and the anterior legs longer than the posterior. He separates the genus from *Matachia* on the sizes and distances apart of the eyes and on the leg order 1 : 4 : 2 : 3, and from *Paramatachia* on the shorter calamistrum.

Eomatachia resembles the other Matachiinae in the presence of an undivided cribellum, broad anterior spinnerets and plumose hairs. It differs in the leg order, the shape of the lip, the thoracic groove which is ellipsoidal and deep, and in the male palp. The details of the bulb are not known, but the tarsus seems a different shape and the tibia has four large apophyses. The body is less long and narrow and the chelicerae shorter and less projecting. It is possible that *Eomatachia* should be associated with the Recent genera, but this seems by no means certain.

SUMMARY

The Matachiinae is a small group of cribellate spiders occurring in eastern Australia and in New Zealand, where the genera are *Paramatachia* and *Matachia* respectively. Four new species are described, *P. ashtonensis*, *P. cataracta*, *P. media* and *M. hirsuta*, bringing the total to seven. The group has been regarded as a subfamily of the Psecridae, but there seems to be no evidence for this. It probably belongs to the Dictynidae, and the subfamilial rank may not be justified. *Eomatachia*, from the Baltic Amber of Oligocene age, has been placed in the group, but this seems by no means certain. All species inhabit insect holes in twigs, and they spin webs of the Dictynid type. It is remarkable that while the tracheal system of *M. livoris* is confined to the abdomen, that of the otherwise very similar *M. hirsuta* extends freely into the cephalothorax.

ACKNOWLEDGMENTS

I wish to record my indebtedness to the Director of the Museum National d'Histoire Naturelle in Paris for the loan of the types of *P. decorata*. Professor V. V. Hickman very kindly collected specimens of *P. tubicola* for me, reared the adult male and allowed me to describe it. I am indebted also to Dr R. R. Forster for the loan of specimens and for useful discussions, and to my wife and sons for much help with the field work.

REFERENCES

- BERLAND, L. 1932. *Les Arachnides*. Paris.
 BRYANT, E. B. 1933. Notes on the types of Urquhart's spiders. *Rec. Cant. Mus.*, 4: 1-27.
 CHAMBERLAIN, G. 1946. Revision of the Araneae of New Zealand, Pt. 2. *Rec. Auck. Inst. Mus.* 3: 85-97.
 COMSTOCK, J. H. 1940. *The Spider Book*. 2nd Ed. New York.
 DALMAS, R. DE 1917 a. Araignées de Nouvelle Zelande. *Ann. Soc. ent. Fr.*, 86: 317-430.
 — 1917 b. Araignée nouvelle d'Australie (Arachn. Psecridae). *Bull. Soc. ent. Fr.*, 19: 350-351.
 FORSTER, R. R. 1955. Spiders from the Subantarctic Islands of New Zealand. *Rec. Dom. Mus.*, 2: 167-203.
 HICKMAN, V. V. 1947. Araneae from Reevesby Island, South Australia. *Proc. Roy. Soc. Victoria*, 60: 1-16.
 MARPLES, B. J. 1956. Spiders from the Three Kings Islands. *Rec. Auck. Mus.*, 4: 329-342.
 PETRUNKEVITCH, A. 1942. A study of amber spiders. *Trans. Conn. Acad. Arts Sci.*, 34: 119-464.
 SIMON, E. 1892. *Histoire naturelle des Araignées*. Paris.
 URQUHART, A. T. 1892. Descriptions of new species of Araneae. *Trans. N. Zeal. Inst.*, 25: 165-190.